

Integrating Biological Monitoring Data from Diverse Sources: Lessons in Database Development and Data Synthesis from the Potomac Basinwide Assessment Project

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Biographical Sketch of Author

LeAnne Astin is employed as an Aquatic Ecologist with the Interstate Commission on the Potomac River Basin, an interstate compact agency that helps the Potomac Basin states and the federal government to cooperatively address water quality and related resource problems in the river. Since 2000, she has served as the principle researcher and analyst for the Potomac Basinwide Assessments Project, as well as assisting in a variety of other Commission programs. She is also the acting chair of the Methods and Data Comparability Board's Water Quality Data Elements workgroup.

Abstract

The Interstate Commission on the Potomac River Basin (ICPRB) relies on data collected by its member jurisdictions to assess the status and trends of the Potomac mainstem and its tributaries. While states' stream monitoring data cannot be compared directly, their agencies utilize similar assessment approaches, all variants of the US EPA's Rapid Bioassessment Protocols. ICPRB adapted this assessment framework toward developing a consistent, basin-wide approach for measuring the status of aquatic biota in the nontidal Potomac. To this end, a relational database management system (RDBMS) to integrate diverse biological monitoring data was developed. Considerable effort was required while designing and analyzing the database because of variability in the data provided. This presentation will highlight the challenges encountered in developing the database and in merging the diverse datasets for analysis. Results suggest that monitoring data from multiple sources can be combined into an analysis framework suitable for bioassessment, if the synthesis is done with care.